

REMARKS

THE AMENDMENTS

Applicants cancel claims 61 through 78 and add claims 79 through 110. Claim amendments are to expedite prosecution of the application. Claim amendments add no new subject matter, and are fully supported throughout the specification and by the drawings and claims as originally filed. Support and reasoning for the amendments are provided below.

Support for Claim Amendments and Reasons for Amendments

These amendments are made to clarify the claims and to expedite allowance of the present application.

New claims 79 through 94 include reference to a “particle switch.” In particular, a particle switch that includes at least three sets of electrodes that are independent of one another and can move particles along different pathways connected at a common branch point. Support for these phrases can be found throughout the application as filed, for example, on pages 18 through 19, figures 1D, 13A, 13B, and related description of the drawings and examples.

New claims 95 through 110 include reference to a “traveling wave magnetophoresis structure.” In particular, a traveling wave magnetophoresis structure that includes an array of electromagnetic units that can be sequentially addressed such that a magnetic particle or magnetizable particle is transferred from one location to another. Support for these phrases can be found throughout the application as filed, for example, on pages 23 to 24, figures 1E and 5B, and related description of drawings and examples.

CLAIMS ARE DEFINITE UNDER 35 USC § 112, SECOND PARAGRAPH

Applicants' claimed invention is definite prior to amendments. To expedite the allowance of the application, Applicants have amended the claims in a manner consistent with the Examiner's suggestions. Applicants do so without prejudice to pursuing the original claims in another application. Applicants respectfully request that these rejections be withdrawn.

CLAIMS ARE NOVEL UNDER 35 USC §102(E) OR 35 USC §103(A)

Applicants' claimed invention is novel and non-obvious over the references prior to amendments. To expedite the allowance of the application, however, Applicants have amended claims to more clearly claim the invention. Applicants do so without prejudice to pursuing the original claims in another application. Applicants respectfully request that these rejections be withdrawn for the reasons set forth below.

1. The Examiner alleges that claims 61 and 78 are anticipated under 35 U.S.C. § 102 (e) by Pourahmadi et al. (U.S. Patent No. 6,440,725). The Pourahmadi et al. reference does not anticipate the claimed invention.

The pending claims recite an integrated biochip including a particle switch with claimed structures or traveling wave magnetophoresis structure with claimed structures. In particular, independent claim 79 refers to a particle switch that includes at least three sets of electrodes that are independent of one another and can move particles along different pathways. Also, independent claim 95 refers to traveling wave magnetophoresis structure that include an array of electromagnetic units such that a magnetic particle or magnetizable particle is transferred from one location to another.

The Pourahmadi et al. reference does not report an integrated biochip having such particle switch structures or traveling wave magnetophoresis structures. Thus, the Pourahmadi et al. reference does not anticipate the claimed invention. Accordingly, Applicants respectfully request that these rejections be withdrawn.

For the foregoing reasons, Applicants submit that the amended claims cannot be anticipated by the Pourahmadi et al. reference under 35 U.S.C. § 102 (e). Accordingly, Applicants respectfully request that this rejection be withdrawn.

2. The Examiner alleges that claims 61 through 64, 66, 67, 70 and 71 are anticipated under 35 U.S.C. § 102 (e), or rendered obvious under 35 USC §103(a) by Anderson et al. (U.S. Patent No. 6,168,948). The Anderson et al. reference does not anticipate the claimed invention or render the claimed invention obvious.

The pending claims recite an integrated biochip including a particle switch with claimed structures or traveling wave magnetophoresis structure with claimed structures. In particular, independent claim 79 refers to a particle switch that includes at least three sets of electrodes that are independent of one another and can move particles along different pathways. Also, independent claim 95 refers to traveling wave magnetophoresis structure that include an array of electromagnetic units such that a magnetic particle or magnetizable particle is transferred from one location to another.

The Anderson et al. reference does not report an integrated biochip having such particle switch structures or traveling wave magnetophoresis structures. Thus, the Anderson et al. reference does not anticipate the claimed invention. Accordingly, Applicants respectfully request that these rejections be withdrawn.

Furthermore, the Anderson et al. reference does not teach, suggest or provide motivation for an integrated biochip having such particle switch structures or traveling wave magnetophoresis structures. Thus, the Anderson et al. reference does not render the claimed invention obvious. Accordingly, Applicants respectfully request that these rejections be withdrawn.

3. The Examiner alleges that claims 61 through 64 and 66 through 78 are anticipated under 35 U.S.C. § 102 (e), or rendered obvious under 35 USC §103(a) by Christel et al. (U.S. Patent No. 6,368,871). The Christel et al. reference does not anticipate the claimed invention or render the claimed invention obvious.

The pending claims recite an integrated biochip including a particle switch with claimed structures or traveling wave magnetophoresis structure with claimed structures. In particular, independent claim 79 refers to a particle switch that includes at least three sets of electrodes that are independent of one another and can move particles along different pathways. Also, independent claim 95 refers to traveling wave magnetophoresis structure that include an array of electromagnetic units such that a magnetic particle or magnetizable particle is transferred from one location to another.

The Christel et al. reference does not report an integrated biochip having such particle switch structures or traveling wave magnetophoresis structures. Thus, the Christel et al. reference does not anticipate the claimed invention. Accordingly, Applicants respectfully request that these rejections be withdrawn.

Furthermore, the Christel et al. reference does not teach, suggest or provide motivation for an integrated biochip having such particle switch structures or traveling wave magnetophoresis structures. Thus, the Christel et al. reference does not render the claimed invention obvious. Accordingly, Applicants respectfully request that these rejections be withdrawn.

CLAIMS ARE NONOBVIOUS UNDER 35 USC §103(A)

Applicants' claimed invention is non-obvious over the references prior to amendments. To expedite the allowance of the application, however, Applicants have provided amended claims to more clearly claim the invention. Applicants do so without prejudice to pursuing the original claims in another application. Applicants respectfully request that these rejections be withdrawn for the reasons set forth below.

The Examiner alleges that claims 65 and 68 are unpatentable due to obviousness under 35 U.S.C. § 103(a) over Anderson et al. (U.S. Patent No. 6,168,948) in view of Parton et al. (U.S. Patent No. 5,653,859). The cited references, Anderson et al., and Parton et al. fail to render the claimed invention obvious.

The pending claims recite an integrated biochip including a particle switch with claimed structures or traveling wave magnetophoresis structure with claimed structures. In particular, independent claim 79 refers to a particle switch that includes at least three sets of electrodes that are independent of one another and can move particles along different pathways. Also, independent claim 95 refers to traveling wave magnetophoresis structures that include an array of electromagnetic units such that a magnetic particle or magnetizable particle is transferred from one location to another.

The Anderson et al. and Parton et al. references, either alone or in combination, fail to suggest, teach, or provide motivation for an integrated biochip having such particle switch or traveling wave magnetophoresis structures as set forth in the claims. Thus, the cited references, either alone or in combination, do not teach, suggest or provide motivation for each and every element of the claimed invention and cannot render the claimed invention obvious. Accordingly, Applicants respectfully request that these rejections be withdrawn.

Applicants submit that the claims are ready for examination and in condition for allowance.

Respectfully submitted,

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David R. Preston
Reg. No. 38,710

David R. Preston & Associates, A.P.C.
12625 High Bluff Dr.
Suite 205
San Diego, CA 92130
Telephone: 858.724.0375
Facsimile: 858.724.0384

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In the event this paper is deemed not timely filed the applicants hereby petition for an appropriate extension of time. The fee for this extension may be charged to Deposit Account No. 501,321 along with any other additional fees which may be required with respect to this paper; any overpayment should be credited to the account. If any fees charged to this account will exceed \$500, applicants respectfully requests that its counsel be notified of such amounts before the Deposit Account is charged.